MEKSHENKOV, M.I.; ANDREYTSEV, A.P.

Universal registration device for luminescence spectrum analysis. Biofizika 6 no.5:615-619 '61. (MIRA 15:3)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(SPECTRUM ANALYSIS--EQUIPMENT AND SUPPLIES)

ANDREYUK, K.I.

VIZIR', P.Ye. [VIZIR, P.IE.], ANDREYUK, K.I. [ANDRIIUK, K.I.], PASICHNIK, A.M. [PASICHNYK, A.M.]

Filtrable forms of Bacterium Breslau. Report No.3: Biological properties of regenerated (secondary) cultures. Mikrobiol.zhur. 20 no.2:2-10 '58 (MIRA 11:9)

1. Z Instituta mikrobiologii AN URSR.
(SALMONELLA)

ANDREYUK, L.V., inzhener.

Ways to increase the productivity of blooming mills. Metallurg no.7:21-23 Jl '56. (MLRA 9:9)

1.Prokatnaya laboratoriya TsZL Magnitogorskogo metallurgicheskogo kombinata.
(Rolling mills)

130-3-9/22

AUTHOR: Andreyuk, L.V. (Engineer).

TITLE: Influence of the scheme used for rolling ingots in a blooming mill on metal surface quality. (Vliyaniye skhemy prokatki slitkov na bluminge na kachestvo poverkhnosti metalla).

PERIODICAL: "Metallurg" (Metallurgist), 1957, No.3, pp.17-20. (U.S.S.R.)

ABSTRACT: An account is given of work carried out by the central works laboratory, Magnitogorsk, in which the surface quality of billets and slabs was studied in relation to the rolling procedure and reductions used on the blooming mill. Five heats each of killed and rimming carbon steel were rolled. To minimise the influence of ingot surface quality half of each heat was rolled into slabs with the normal rolling procedure and reductions governed by motor power, the other half with reductions approximately halved in the early stages by the addition of four passes. Taking the time required to remove surface defects as the quality criterion the decrease in reductions had no effect on the killed steel but sometimes had a bad effect on the rimming steel.

Investigations of the effects of changes in the number of passes between manipulations showed there was no advantage in manipulation of killed steel after the first two passes. The procedures tried were: 2-4-2-4-2-1, 2-8-2-1, 2-8-2-1 and 8-2-1. This was confirmed in the further experiments. For rimming steel a relation was found between the total edge reduction and

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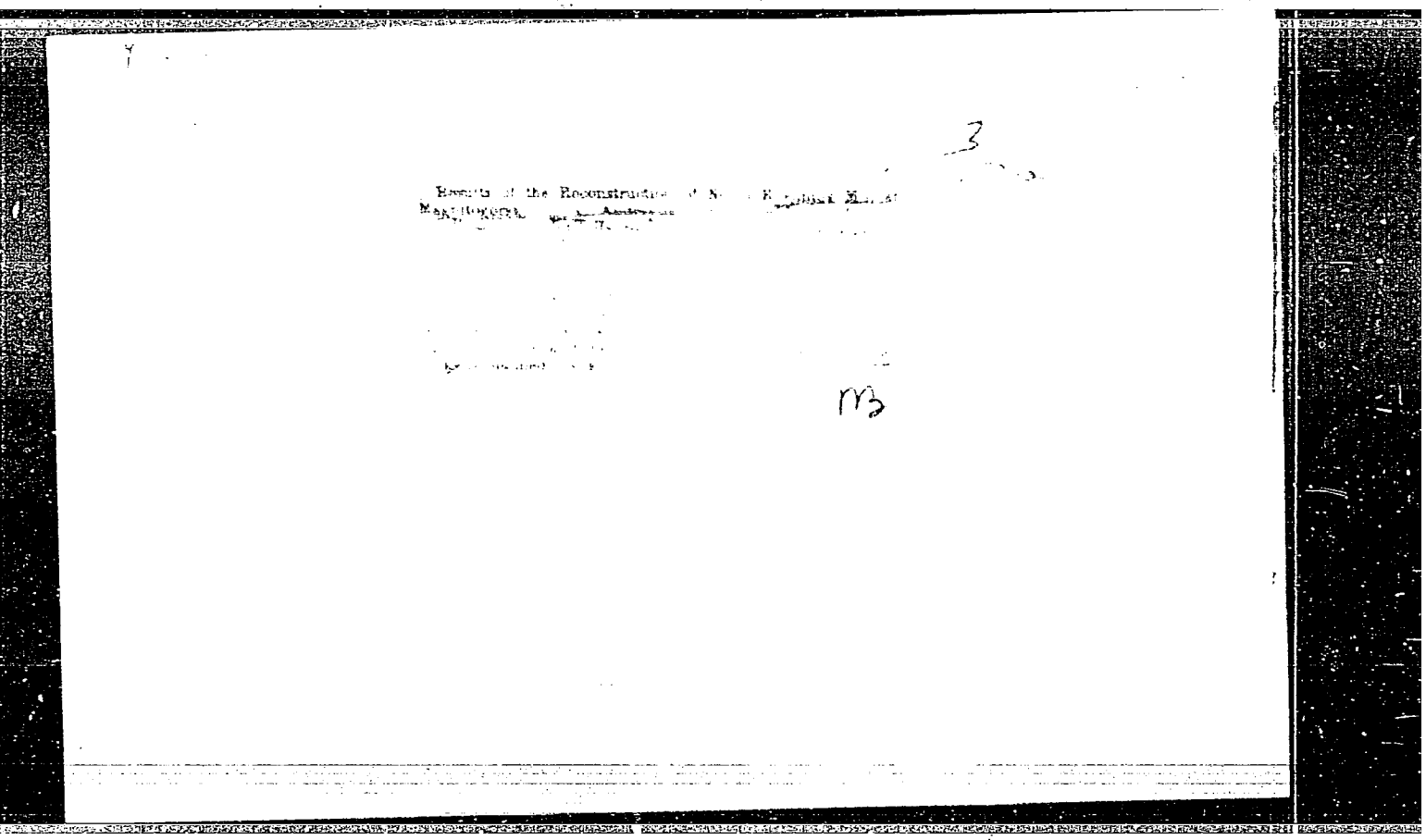
PA - 2376

On the Geometry of the Lower Part of an Ingot.

of the lower part of the ingot is reduced even more if at the same time the width of the tapered part is increased.
(6 illustrations).

ASSOCIATION: Metallurgical Combine of Magnitogorsk.
PRESENTED BY:
SUBMITTED:
AVAILABLE: Library of Congress.
Card 2/2



3

m3

SOV/133-59-2-13/26

AUTHOR: Andreyuk, L.V., Engineer

TITLE: An Increase in the Durability of Rolling Rolls by Knurling (Povysheniye stoykosti prokatnykh valkov obkatkoy)

PERIODICAL: Stal', 1959, Nr 2, pp 141-145 (USSR)

ABSTRACT: An investigation of the influence of knurling rolls on the durability of their surface was carried out on a cogging duo reversing stand (fig.1). The rolls made from 60KhN steel were well cooled so that their surface temperature did not exceed 60-80°C. The knurling of rolls was done with a specially designed single roller installation shown in fig.2. The operation of the installation was first tested on a normal lathe on a roll 140 mm in diameter from Steel 50. From the results obtained on knurling the roll by various methods on separate sectors (table 1), it is concluded that: a) an increase in the surface hardness is approximately proportional to the decrease in diameter after the treatment; b) the highest increase in density of the metal takes place during the first pass; c) the best results are obtained on knurling with a lubrication. Knurling of cogging mill rolls was carried out at 5.95 rpm corresponding to a peripheral velocity of up to 0.32 m/sec,

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An Increase in the Durability of Rolling Rolls by Knurling

the whole operation takes about 2 hours. The surface quality after knurling was considerably smoother; the decrease in roll diameter amounts to 0.5 - 0.8 mm. The mean wear of rolls during rolling was measured according to the scheme shown in fig.3. The rate of wear of treated and untreated rolls is compared in fig.4 and table 2. The increase in service life of treated rolls amounted to about 27.5%. The rate of wear of treated and untreated rolls becomes equal after a few days of operation, so that the increase in durability is achieved by an improvement in the surface quality immediately after turning. The knurling installation was tested on 8 pairs of cogging mill rolls. After the treatment of 15-20 m^2 of the rolls surface, the working roller requires replacement. The working surface of backing rollers remains in a good state. The installation is suitable only for the treatment of cylindrical surfaces. For treatment of small roll passes, a ball supported on a

SOV/133-59-2-13/25

An Increase in the Durability of Rolling Rolls by Knurling

universal bearing was tried (fig.5) with poor results.
There are 5 figures, 2 tables and 6 references - all Soviet.

ASSOCIATION:Magnitogorskiy Metallurgicheskiy Kombinat (Magnitogorsk Metallurgical Combine)

Card 3/3

AUTHOR: Andreyuk, L.V., engineer SOV/133-59-9-16/31

TITLE: Optimum Conditions for Rolling Ingots on a Blooming Mill

PERIODICAL: Stal', 1959, Nr 9, pp 817-820 (USSR)

ABSTRACT: In order to increase the output of a blooming mill on the Magnitogorsk Works, various modifications in the rolling practice were tried and in the paper, the experience in rolling the same type of ingots with various numbers of passes is discussed. The calibration of the rolls is shown in Fig 1. Rolling conditions of rimming steel ingot weighing 7.1 tons with the bottom cross-section of 810 x 640 mm - in 11(A) and 13 passes (B) - table 1; changes in the mean rolling velocity on transfer from A to B practice - table 2. It is concluded: 1) that an increase in the output of the mill due to increasing degree of reduction per pass is possible only to a certain limiting reduction range, corresponding to a good grip of the ingot by rolls. On further increase of reductions, the output increases only for some ingots while on average it does not change or even decreases. The optimum rolling scheme is such at which a natural grip is attained at high velocities in all passes (this

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Optimum Conditions for Rolling Ingots on a Blooming Mill

will enable automation of the control of the main drive with a further increase in the output). An excessive intensification of reduction practice progressively decreases the service life of highly loaded parts of the mill (gear rolls, spindles etc). For a further increase in the output of a blooming mill, already operating under limiting conditions of a secure grip, intensification of rolling velocities could be introduced. Six months experience in the operation of the Magnitogorsk blooming mill with a somewhat increased number of passes confirmed that maintenance of such an optimum rolling practice is advantageous (the output per hour did not decrease while the number of stoppages decreased). There are 3 figures, 2 tables and 8 Soviet references.

ASSOCIATION: Magnitogorskiy metallurgicheskiy kombinat (Magnitogorsk Metallurgical Combine)

ANDREYUK, L.V., inzh.-kalibrovshchik; FURMAN, Ya.B., inzh.-kalibrovshchik

Rolling of grooved spring steel. Metallurg 5 no.8:20-23 Ag '60. (MIRA 13:7)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Rolling(Metalwork)) (Springs(Mechanism))

ANDREYUK, L.V., inzh.-inzh.-kalibrovshchik

Best rolling conditions on blooming mills. Metallurg 6 no. 1:31-33 Ja '61. (MIRA 14:1)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Rolling (Metalwork))

S/137/61/000/006/030/092
A006/A101

AUTHOR: Andreyuk, L.V.

TITLE: On the problem of optimum conditions of rolling ingots on a blooming mill

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 6, 1961, 2, abstract 6D11 ("Tr. Konferentsii: Tekhn. progress v tekhnol. prokatn. proiz-va", Sverdlovsk, Metallurgizdat, 1960, 113 - 125)

TEXT: Two ways are compared of increasing the efficiency of blooming mills: 1) by reducing the number of passes, which, at unchanged power of the motor, is connected with reduced rolling speed; 2) by increasing the rolling speed at moderate reduction and sometimes by increasing the number of passes. On the basis of investigations, performed on MMK and KMK blooming mills, and of calculations, it was established that 1) highest efficiency of the blooming mill is obtained at optimum reductions which are less than the permissible reductions for the given mill; 2) least machining time is obtained at optimum reduction; 3) a reduction of the total duration of rolling at reductions exceeding optimum ones,

Card 1/2

ANDREYUK, L. V.

Cand Tec Sci, Diss -- "Means of increasing the output of blooming mills". Stalinsk, 1961. 25 pp, 20 cm (Min of Higher and Inter Spec Educ RSFSR. Siberian Metallurgical Inst imeni S. Ordzhonikidze), 120 copies, No charge (KL, No 9, 1961, p 181, No 24323). /61-51118/

S/130/61/000/008/003/005
A006/A101

AUTHOR: Andreyuk, L. V., Calibration Engineer

TITLE: Experimental rolling of ingots in pairs on a slab mill

PERIODICAL: Metallurg, no. 8, 1961, 24-25

TEXT: In order to raise the efficiency of a slab mill, experimental rolling of ingots in pairs was carried out at the Magnitogorsk Metallurgical Combine. Slabs of 100 x 1,010 mm were rolled from $\frac{1,060 \times 550}{1,100 \times 590}$ x 2,200 mm, 8.6 ton ingots in 13 passes. Rolling in pairs was performed during the first 10 passes, in the final three passes, the ingots were rolled one by one. The additional time for rolling the second ingot consists merely in the machining time and a short interval between two ingots. The new method is most effective when rolling short material. In the last final passes rolling in pairs may entail breakdowns. The experimental investigation shows that the time of rolling the ingots by the described method can be reduced by 26 - 30%, so that the efficiency of slab mills may be considerably raised without any investment costs. There is 1 figure.

ASSOCIATION: Magnitogorskiy metallurgicheskiy kombinat (Magnitogorsk Metallurgical Combine)

Card 1/1

ANDREYUK, L.V., inzhener-kalibrovshchik

Mastering the operation of the Magnitogorsk slabbing mill. Metallurg 7 no.7:25-29 Jl '62. (MIRA 15:7)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Magnitogorsk—Rolling mills)

TARNOVSKIY, Iosif Yakovlevich; PAL'MOV, Yevgeniy Vasil'yevich; TYAGUNOV, Vladimir Arkad'yevich; MAKAYEV, Sergey Vladimirovich; KOTEL'NIKOV, Veniamin Petrovich; ANDREYUK, Leonid Vasil'yevich. Prinimal uchastiye KOTSAR', S.L.; LYASHKOV, V.B., red.; SKOROBOGACHEVA, A.P., red.izd-va; DOBUZHINSKAYA, L.V., tekhn. red.

[Rolling on a blooming mill] Prokatka na bliuminge. Moskva, Metallurgizdat, 1963. 388 p. (MIRA 16:10)
(Rolling (Metalwork))

ANDREYUK, L.V.; LITVAK, I.S.

Computer machines calculate rolling parameters. Metallurg 8 no.6:29-31 Je '63. (MIRA 16:7)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Rolling (Metalwork))
(Electronic digital computers)

ANDREYUK, L.V.

Rolling heavy ingots on a slabbing mill. Metallurg 8 no.7: 24-26 Jl '63. (MIRA 16:8)

(Rolling (Metalwork))

ANDREYUK, L.V.; IGON'KIN, M.I.

Device for the straightening of roll warpage on blooming mills. Metallurg 8 no.9:36 S '63. (MIRA 16:10)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Rolling mills—Attachments)

ANDREYUK, L.V., kand.tekhn.nauk; LITVAK, I.S., inzh.

Effect of various rolling parameters on the performance of blooming mills. Stal' 23 no.2:140-146 F '63. (MIRA 16:2)
(Rolling (Metalwork))

ANDREYUK, L.V.; RANNEV, G.G.; KOROTKEVICH, B.M.; NOVIKOV, M.N.; DOLZHENKOV, F.Ye.

New developments in research. Stal' 24 no.8:730 Ag '64. (MIRA 17:9)

L 47167-66 EWT(d)/EWT(m)/EWP(v)/EWP(t)/ETI/EWP(k)/EWP(h)/EWP(l) IJP(c)

ACC NR: AR6000437 SOURCE CODE: UR/0137/65/000/009/D005/D005

JD/HW

AUTHORS: Vysokovskiy, S. N.; Rannev, G. G.; Sokolov, V. A.; Andreyuk, L. V.; Merkulova, R. M.

44
B

TITLE: Energy and temperature parameters for rolling of thin sheets from different steels and alloys on stand "1500"

SOURCE: Ref. zh. Metallurgiya, Abs. 9D33

REF SOURCE: Sb. Teoriya i praktika metallurgii. Vyp. 7. Chelyabinsk, 1964, 90-100

TOPIC TAGS: metal rolling, metallurgic machinery, sheet metal, test stand // 1500 test stand

ABSTRACT: The energy and temperature parameters during hot rolling of sheets were investigated on a reversible 4-roller stand 1500. The metal pressure on the rollers, armature current, excitation current, mean square current of the motor, velocity of revolution of rollers, displacements of pressure bolts, thickness of sheets, and their temperature were determined. The results of the measurements are tabulated. Calculated results are compared with experimental data. Investigations have shown that it is possible in some cases to decrease the number of rolling operations without exceeding the maximum permissible pressure. In other cases, the redistribution of compressions between passages permitted a more uniform stand loading without exceeding the maximum permissible metal pressure on the rollers. 10 illustrations, 1 table. Bibliography of 5 citations. L. Kochenova [Translation of abstract]

SUB CODE: 13, 11

UDC: 621.771.001

Card 1/1 egla

ROZOVSKIY, Yu.A., kandidat tekhnicheskikh nauk; MARCHENKO, Ye.A., inzhener; ANDREYUK, V.A., inzhener.

Self-oscillation and self-excitation of compensated synchronous compensators. Elektrichestvo no.5:59-63 My '56. (MLRA 9:8)

1. Nauchno-issledovatel'skiy institut postoyannogo toka.
(Electric power distribution)

ANDREYUK, V. A.,

"Derivation of an Adequate Condition of Stability in the 'Large' of a Synchronous Machine," page 158.

High Voltage Technique, Moscow, Gosenergoizdat, 1958, 664pp
(Series: Its Trudy, No. 195)

This collection of articles sums up the principal results of investigations and studies made by Prof. A. A. Gorev, Dr. Tech. Sci., and his staff in the field of high voltage phenomena and techniques at LPI (Leningrad Polytech Inst.) It was at this instutute that Prof. Gorev completed his higher scientific education and then taught and carried on his investigations in the field until his death in 1955. In 1956, by decree of Min of Higher Education, the High-Voltage Lab. at LPI was named after A. A Gorev.

ANDREYUK, V.A.

Finding sufficient conditions for dynamic stability of a synchronous machine. Trudy LPI no.195:168-186 '58. (MIRA 11:10)
(Electric machinery, Synchronous)

ANDREYUK, V.A.

Linearized equations of a synchronous machinery system taking transient processes in the stator circuits and the magnetic saturation into account. Izv. NIIPT no.4:213-226 '59. (MIRA 13:2)

(Electric motors, Synchronous)

ANDREYUK, V.A., inzh.

Assumptions used in static stability analysis of long-distance power lines under the condition of "strong" adjustment of excitation of the synchronous machines. Izv.vys.ucheb.zav.; energ. 3 no.6:1-6 Je '60. (MIRA 13:6)

1. Nauchno-issledovatel'skiy institut postoyannogo toka.
(Electric lines)

ANDREYUK, V.A.; SHAYKHULIN, R.K.

Stability of a consolidated power system with "weak" couplings with dangerous unbalance of power relationships in the unifying systems. Izv. NIIPT no.5:236-246 '60. (MIRA 14:1)
(Electric power distribution)
(Interconnected electric utility systems)

ANDREYUK, V.A.

Analysis of certain assumptions used in the study of the static stability of long-distance electric power transmission systems. (MIRA 14:9)
Izv. NIIPT no.7:251-258 '61.
(Electric power distribution)

ANDREYUK, V.A.; GORDON, I.A.; SHAYKHULIN, R.A.

Hysteresis moments in salient-pole electrical machinery. Izv. NIIPT no.7:259-271 '61. (MIRA 14:9)
(Electric machinery)

ANDRIYUK, V.A.; ROZOVSKIY, Yu.A.

Use of compensated synchronous support compensators in long-distance power transmission systems. Izv. NIIPT no.2:208-218 '57. (MIRA 18:9)

ANDREYUK, V.A.

Derivation of adequate stability conditions in the "large" for a system of synchronous machines. Izv. NIIPT no.2:239-257 '57.
(MIRA 18:9)

ANDRIYUK, M.I. [Andriiuk, K.T.]; KOZAN, S.B.

Effect of some environmental factors on the formation of heteroauxin by actinomycetes. Mikrobiol. zhur. 26 no.2: 45-51 '64. (MIRA 18:8)

1. Institut mikrobiologii AN UkrSSR.

ANDREYUK, Ye.I. [Andriiuk, K.I.]

Rhizosphere actinomycetes of winter wheat. Mikrobiol. zhur. 22 no. 3:27-34 '60. (MIRA 13:12)

1. Iz Instituta mikrobiologii AN USSR.
(UKRAINE—WHEAT) (ACTINOMYCES) (RHIZOSPHERE MICROBIOLOGY)

ANDREYUK, Ye.I. [Andriiuk, K.I.]

Effect of gamma rays on certain biological properties of B. Breslau. Mikrobiol. zhur. 22 no. 3:53-57 '60. (MIRA 13:12)

1. Iz Instituta mikrobiologii AN USSR.
(SALMONELLA) (GAMMA RAYS—PHYSIOLOGICAL EFFECT)

ANDREYUK, Ye.I. [Andriiuk, K.I.]; VLADIMIROVA, Ye.V. [Vladymyrova, O.V.]

Effect of some actinomycetes on wheat rhizosphere bacteria.
Report No. 1. Mikrobiol.zhur. 24 no.2:22-29 '62. (MIRA 15:12)

1. Institut mikrobiologii AN UkrSSR.
(ACTINOMYCES) (WHEAT) (RHIZOSPHERE MICROBIOLOGY)

ANDREYUK, Ye.I. [Andriiuk, K.I.]; VLADIMIROVA, Ye.V. [Vladymyrova, O.V.]

Formation of heteroauxin by soil actinomycetes. Mikrobiol. zhur. 25 no.5:3-7 '63 (MIRA 16:12)

1. Institut mikrobiologii AN UkrSSR.

L 23098-66 EWT(l)/ETC(f)/EPF(n)-2/EWG(m) IJP(c) AT

ACC NR: AP6007077 UR/0057/66/036/002/0294/0296

AUTHOR: Andrezen,A.B.; Gordiyenko,V.P.; Dubovoy,L.V./ Royfe,I.M./ Yakovlev,S.P.

ORG: None

TITLE: Dynamic stabilization of a direct discharge in a magnetic field

SOURCE: Zhurnal tekhnicheskoy fiziki, v.36, no.2, 1966, 294-296

TOPIC TAGS: gas discharge plasma, positive column, plasma magnetic field, hydrogen plasma, helium, orgon, plasma instability, electric field, medium frequency

ABSTRACT: The authors have investigated the stabilizing effect of a high frequency (0.8MHz) electric field on a high current (up to 12 kA) pulsed gas discharge in a longitudinal magnetic field. The discharges took place in a 10 cm diameter 100 cm long quartz tube containing hydrogen at pressures from 10^{-2} to 10^{-4} mm Hg. The diameter of the discharge column was limited to 4 cm by glass septa located close to the electrodes and containing circular openings. The duration of the current pulses was 0.5 millisec. The magnetic field (up to 10 kOe) was also pulsed, but as its period was 15 millisec, the magnetic field was practically constant during the discharge. The high frequency electric field was provided by a pulsed oscillator and could be made strong enough to give rise to an alternating current of 8 kA in the discharge column. The stability of the discharge was investigated with the aid of high speed photography, a magnetic probe, and a collimated photomultiplier. The discharges were found to be

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UDC:533.9

ACC NR: AP6007077

highly unstable; many harmonics of the helical instability with a fundamental frequency of about 40 kHz were observed. The instability was greatly influenced by the strengths of the magnetic field and the discharge current, and particularly by the location of the glass septa limiting the diameter of the discharge column. The high frequency electric field was observed to exert a stabilizing influence, but this stabilizing influence was marked only when the high frequency component of the current in the discharge column was comparable with or greater than the direct component. The ratio of the high frequency to the direct component of the current required to effect a given degree of stabilization was the smaller, the higher the discharge current. Experiments with helium or argon in place of hydrogen gave similar results. It is concluded that the stabilization of the current-conventive instability of a positive column in a magnetic field, predicted by the current semiquantitative theory, is confirmed by the present experiments. The authors thank S.M.Osovets for his interest in the work and mention that S.N.Boyko, B.A.Stekol'nikov, and S.P.Dimitriyev participated in the construction of the apparatus. Orig. art. has: 2 figures.

SUB CODE: 20 SUBM DATE: 12Jul65 ORIG. REF: 005 OTH REF: 000

Card 2/2 UCR

ANDREZEN, E.E., professor; LEBEDINSKAYA, E.A.; RIVKINA, Ye.O., kandidat meditsinskikh nauk (Leningrad)

Prevention of symblepharon after burns of the eyeball and eyelids. Vest. oft. 69 no.5:22-25 S-O '56. (MIRA 9:12)
(EYE, dis.
burns, prev. of symblepharon)

ANDREZEN, E.E., prof.

Ocular atrophy following injury and sympathetic aphthalmia.
Vest.oft. 71 no.3:29-30 My-Je '58 (MIRA 11:9)

1. Leningradskaya gorodskaya glaznaya bol'nitsa (glavnyy vrach M.Ya. Lushin.)
(OPHTHALMIA, SYMPATHETIC, pathology,
atrophy (Rus))
(EYE, wds. & inj.
causing atrophy (Rus))

ANDREZEN, E.E., prof.

Threshold of color discrimination in glaucoma. Vest.oft. 72 no.6: 17-22 N-D '59. (MIRA 13:5)

1. Leningradskaya gorodskaya ob"yedinennaya glaznaya bol'nitsa.
(COLOR PERCEPTION TESTS)
(GLAUCOMA physiol.)

ANDREZEN, E.E., prof.

Concerning the article of Candidate of Medicine Science S.P.Petruni.
Oft.zhur. 15 no.4:243-244 '60. (MIRA 13:11)
(EYE--BURNS AND SCALDS)

ANDREZEN, E.E., prof.

Removal of magnetic foreign bodies from the crystalline lens.
Vest.oft. no.3:59-61 '61. (MIRA 14:9)

1. Zav. kafedroy glaznoy kliniki I Leningradskogo meditsinskogo instituta imeni I.P. Pavlova.
(EYE--FOREIGN BODIES)

MANENKOV, P.V., ANDREZEN, N.V.

[Our method of local infiltration anesthesia in obstetrical and gynecological surgery] Nasha tekhnika mestnoi infil'tratsionnoi anestezii pri akushersko-ginekologicheskikh operatsiiakh. Kazan', Tatknigoizdat, 1956. 70 p. (MIRA 11:1)
(ANESTHESIA IN OBSTETRICS)

ANDRZEJEWSKI, H.

Stenopharyngdon idella (Val.) in its role of canal cleaner. Wszechswiat no.11:267 N'63.

The Gran Paradiso National Park as a mainstay of the bouquetin. Ibid.:267

"Stone circles in the village of Odry" by Anna Tylzanowska, Czeslaw Potemski. Reviewed by H. Andrzejewski. Ibid.:271-272

ZAUTNER, F.L., inzh.; FEYGEL'MAN, I.I., inzh.; ANDREZHEYKO, M.M., inzh.; BORISOVICH, V.I., inzh.

Optimal length of the fan blades of short-circuited rotors of explosion-proof asynchronous motors. Elektrotekhnika 36 no.7:47-49 Jl '65. (MIRA 18:7)

ANDREZJEWSKI, L.

ANDREZJEWSKI, L. A proper model of a glasshouse is an important factor in the economy of building and production. p. 22

Vol. 8, no. 8, Aug. 1956
BUDOWNICTWO WIEJSKIE
AGRICULTURE
Poland

So: East European Accession, Vol. 6, No. 5, May 1957

ANDRIADI, Viktor Konstantinovich; SHOFENSKIY, Leonid Andreyevich; VEKSLER, Z.Ya., inzhen. red.

[Controlling pressures in indoor water supply systems] Regulirovanie naporov v sistemakh vnutrennego vodoprovoda. Moskva, Stroiizdat, 1964. 36 p. (MIRA 17:9)

ANDRIADI, Ye.L.; POLYAKOVA, V.V.

Spectrum analysis of silver nitrate and metallic (refined) silver. Sbor. nauch. trud. Gintsvetmeta no.18:100-103 '61. (MIRA 16:7)

(Silver nitrate—Spectra)
(Silver—Spectra)

ANDRIADZE, A. N.

Dissertation: "Combined Action of Ammonium Thiocyanate and Nicotinic Acid on the Blood Pressure of Animals With Different Kinds of Hypertension (Renal and Reflexogenic)." Cand Med Sci, Tbilisi State Medical Inst, Tbilisi, 1954. (Referativnyy Zhurnal--Khimiya, Moscow, No 10, May 54)

SO: SUM 318, 23 Dec 1954

USSR/Human and Animal Physiology. Circulation T-5

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 65268

Author : Gvishiani G.S., Andriadze A.N.
Inst : The Institute of Clinical and Experimental Cardiology of the Academy of Sciences of the Georgian SSR
Title : A Comparison of the Effects of Renol and Renin on the Cardiovascular System.

Orig Pub : Tr. In-t klinich. i eksperim. kardiol. AN GruzSSR, 1956 (1957), 4, 279-285

Abstract : The intravenous injection of renol in physiological solution produced an increase in blood pressure in unanesthetized dogs and in cats under hexenal anesthesia. The maximum effect was seen after 1-2 minutes and depended upon the dose. Renin under these conditions brought about a more rapid but less pronounced pressor effect. The pressor effect of renol and renin lasted in cats in which the medulla was destroyed. The injection of renol or renin into an isolated extremity or intestine, connected with the rest of the cat only by

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USSR/Human and Animal Physiology. Circulation T-5

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 65268

nerves, produced a brief but pronounced rise in blood pressure in the carotid artery. In the isolated ear of a rabbit, the innervation of which remained intact, renol and renin produced vasoconstriction, as they did when injected directly into the nutrient fluid and when injected into the femoral vein. Renol caused acceleration of cardiac contractions without changing the rhythm. Renin exerted no effect upon the heart. The effect of renol and renin is exerted through the receptors of the vessles and through the vasomotor center.--Z.T. Samoylova

Card : 2/2

ANDRIADZE, A.N.

Effect of some new complex cobalt compounds on the development of experimental atherosclerosis. Trudy Inst. klin. i eksper. kard. AN Gruz. SSR 8:189-193 '63. (MIRA 17:7)

1. Institut kardiologii AN GruzSSR, Tbilisi.

ANDRIAN, A.; COJOCARU, Gh.; BORSARU, I.; AFTENIE, B.; STEFANESCU, C.

Thoracoplasty in pulmonary tuberculosis. The results obtained in 428 cases (620 surgical interventions) at the end of 5-15 years following the operation. Rumanian M Rev. no.2:24-27 Ap-Je '60.
(TUBERCULOSIS, PULMONARY surgery) (THORACOPLASTY)

ANDRIAN, Alexandru, ing.

Superficial distribution of the unitary strains in the parts submitted to various stresses. Metalurgia constr mas 13 no.9:796-806 S '61.

(Machinery) (Strains and stresses)

MUNTIU, N.; CHELEMEN, N.; ANDRIAN, T.; CORNECI, I.; BADITOIU, I.; IUGA, C.

The effect of ionizing radiation on the course and treatment with neosalversan of experimental trypanosomiasis in the rat. Arch. Roum. path. exp. microbiol. 20 no.1:77-85 Mr '61.

1. Travail du Laboratoire de Medecine Veterinaire du Ministere des Forces Armees et de l'Institut de Recherches Pharmaceutiques et pour le controle du Medicament.

(TRYPANOSOMIASIS exper) (RADIATION EFFECTS exper)
(NEOARSPHENAMINE pharmacol)

MUNTIU,N.; ANDRIAN, Tr.; FETZEANU, A.

Dunamics of antibodies in experimental glanders. Influence of synergic treatment with sulfathiazol and specific antigen on the appearance, development and disappearance of antibodies. Arch. roum. path. exp. microbiol. 23 no.3:643-648 S'63

1. Travail de l'Institut de Recherches Veterinaires et de Biopreparations "Pasteur", Bucarest.

RUMANIA

COSTACHEL, O., Prof.; CORNECI, I., and ANDRIAN, T. [Affiliations not shown]

"Recent Advances in Biological Protection Against Radiation Lesions"

Bucharest, Revista Sanitara Militara, Vol 16, Special No., 1965; pp 339-364

Abstract: Review of mode of action, macromolecule protection with cell-free homogenates, plasma or serum components, nucleic acids, protection by use of viable cells, discussing the number of cells required; tabulation of studies in rats, mice, guinea pigs, dogs and monkeys; immunologic problems in bone marrow transplants. 9 tables, 3 graphs.

1/1

ANDRIANKIN, E.I.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1907
AUTHOR ANDRIANKIN,E.I.
TITLE The Problem of the Intense, Nearly Spherical Explosion.
PERIODICAL Dokl.Akad.Nauk, 111, fasc.3, 554-556 (1956)
Issued: 1 / 1957

L.I.SEDOV solved the automodellike problem of the strong explosion with spherical symmetry. It is further of interest that the shape of the wave differs but little from a sphere and that the motion of the gas (which is here assumed as being adiabatic with constant ratio $c_p/c_v = \gamma$ of the specific heats) is nearly automodellike. The problem is solved easily in polar coordinates in LAGRANGE variables.

Part of the quantities occurring here and of their derivatives is assumed to be small. It is then possible not only to linearize the gas-dynamic equations of the problem, but also to separate the variables in the equations for the small quantities; the respective solution ansatz is explicitly written down. Also the relations resulting from a combination of the continuity equation and the momentum equation and a relation that serves for determining density are explicitly given. As boundary conditions for the combined equations the theorems of conservation and the necessary continuity of the radius and of the angles which apply on the front of the shock wave are used. This being so, the variables can be separated if after linearization they are represented in form of a series:

Andriankin, E. I

AUTHORS: Andriankin, E. I., Ryzhov, O. S. 20-5-9/54

TITLE: The Propagation of a Nearly Spherical Thermal Wave (Rasprostraneniye teplovoy volny, blizkoy k sfericheskoy).

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 115, Nr 5, pp. 882-885 (USSR)

ABSTRACT: The law of heat propagation is here assumed to be nearly automodel-like. The amount of heat Q is assumed to have been separated in a small volume (point) at the initial moment. The authors here investigated the thermal wave propagating in a medium at rest with variable density and exponential dependence of the heat conductivity coefficient on temperature. Density is assumed to be nearly constant, and the initial temperature of the medium is assumed to be equal to zero. At first an equation for the heat influx in the spherical system of coordinates and the condition for the preservation of energy is written down. If density is constant everywhere, the problem is characterized only be the two constants c and C. In this case the problem is automodel-like. In the case of variable density also the dependence of the solution

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The Propagation of a Nearly Spherical Thermal Wave 20-5-9/54

of energy an expression for Q on the coordinates of the wave at a given point of time is obtained. There are 3 Slavic references.

ASSOCIATION: Chemical-Physical Institute AN USSR (Institut khimicheskoy fiziki Akademii nauk SSSR).

PRESENTED: By M. A. Lavrent'yev, Academician, March 15, 1957

SUBMITTED: March 4, 1957

AVAILABLE: Library of Congress

CARD 3/3

SOV/24-58-12-2/27

AUTHOR: Andriankin, E.I. (Moscow)

TITLE: Perturbation Method for the Problem of a Powerful Explosion (Metod vozmushcheniy dlya zadachi o sil'nom vzryve)

PERIODICAL: Izvestiya Akademii Nauk, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 12, pp 5 - 14 (USSR)

ABSTRACT: A powerful non-spherical explosion in a uniform and non-uniform atmosphere is considered assuming that the ratio of the specific heats of the gas remains constant. A method for linearizing the equations describing the phenomenon is given and a study is made of explosions in a medium with a constant density gradient. An analysis is carried out of the conservation laws on the basis of which formulae are derived which connect the total energy of the gas with the law of propagation of the front of the shock wave. In the first part of the paper the equations for the adiabatic flow of a gas are re-expressed in a non-dimensional form and the boundary conditions are stated. The boundary conditions are then linearized and the variables are separated.

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Perturbation Method for the Problem of a Powerful Explosion

Asymptotic solutions are then obtained and the conservation laws are discussed. The results are applied to the case where the density varies linearly with height. There are 6 figures, 2 tables and 9 Soviet references.

ASSOCIATION: Institut Khimicheskoy Fiziki AN SSSR (Institute of Chemical Physics Ac.Sc. USSR.

SUBMITTED: 11th January 1958.

Card 2/2

24 (8)

AUTHOR: Andriankin, E. I.

SOV/56-35-2-16/60

TITLE: The Propagation of a Nonautomodel Thermal Wave (Rasprostraneniye neavtomodel'noy teplovoy volny)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 2, pp 428-432 (USSR)

ABSTRACT: The author investigates the propagation of an energy emitted by a point source (Q_o) in a gas by basing upon the following assumptions:

$E = aT^{\lambda} + bT^4$ ($b = 4\sigma/c$, c = velocity of light, σ(Stefan-Boltzmann (Bol'tsman)) = $5{,}67 \cdot 10^{-5}$ erg/cm^2. sec.grad^4; a and λ can be chosen at random). For the free length of path l it holds that $l = l_o T^n$, the equation of thermal equilibrium is:

$$\frac{\partial E(t)}{\partial t} = \frac{c_o}{r^2} \frac{\partial}{\partial r} r^2 \frac{\partial T^k}{\partial r} \quad \text{with } k = n+4, \quad c_o = 16\sigma l_o / 3k,$$

and for the temperature dependence of the heat conductivity coefficient it holds that $\varkappa \sim T^{k-1}$. The equation for Q_o

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$Q_0 = 4\pi \int_0^{r_f} (aT_*^{\lambda} + bT_*^4)r^2 dr$, where $T_*(t)$ is the temperature at the wave front, is further dealt with. It is taken into account that the internal energy of the gas is temperature-dependent. Furthermore, formulae for $\gamma(k)$ and γ_0 are derived and, for the case that $\gamma \approx \gamma_0$, γ_0 is calculated for $k = 6$. (Result: $\gamma = 0{,}251$ and $\gamma_0 = 0{,}252$). There are 2 figures and 5 references, 5 of which are Soviet.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR
(Institute of Chemical Physics, AS USSR)

SUBMITTED: March 15, 1958

FRASH I BOOK EXPLOITATION SOV/5827

Moscow. Fiziko-tekhnicheskiy institut

Issledovaniya po fizike i radiotekhnike (Research in Physics and Radio Engineering) Moscow, Obornogiz, 1959. 270 p. (Series: Its: Trudy, vyp. 4) Errata slip inserted. 2,150 copies printed.

Sponsoring Agency: KSFSR. Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya.

Ed.: K.Ya. Zaytsev, Engineer; Ed. of Publishing House: S.D. Antonova; Tech. Ed.: L.I. Gerasimkina; Managing Ed.: A.S. Zamorskaya, Engineer.

PURPOSE: This book is intended for scientific workers, students in advanced courses and engineers.

COVERAGE: This is a collection of 15 studies dealing with problems of radio physics, electronics, quantum physics, and aerodynamics. The studies examine the method of least squares as applied to the propagation of radio waves in the presence of a plane junction, the general conditions of stability of a random process at the output of a linear filter while a periodic variable random process is supplied at the input of the filter, the results of experiments with a ferromagnetic specimen with large Barkhausen jumps as an explanation of the noise mechanism in ferromagnets at cyclic magnetization reversal, experiments for the determination of thermal characteristics and the results of an experimental study of a turbulent boundary layer in a supersonic flow. No personalities are mentioned. References accompany most articles.

TABLE OF CONTENTS:

Gribkovskiy, B.I. (Candidate of Physics and Mathematical). A Plane Shock Wave in a Plastic Medium 144

This is a study of the propagation of a plane shock wave in a medium persisting variable density which depends on the pressure amplitude at the wave front. A case in which a second wave of constant amplitude overtakes the front of a strong discontinuity is investigated.

Kapalov, V.P. Experimental Study of a Turbulent Boundary Layer on a Plate in a Supersonic Flow When the Air and Carbon Dioxide are Injected 152

Techniques of measuring velocity fields and concentration in a turbulent layer of the supersonic flow at uniform gas injection are described. Similarity of velocity profiles for supersonic and subsonic flows is established. Approximate similarity between the velocity fields and relative concentrations at carbon dioxide injection (isothermal case) is shown. This work was done in 1956.

AVAILABLE: Library of Congress

Card 9/9

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ANDRIANKIN, E.I., kand.fiz.-mat.nauk

Plane shock wave in a plastic medium. Trudy MFTI no.4:144-151 '59. (MIRA 13:9)
(Shock waves)

24(8) SOV/20-124-1-15/69

AUTHORS: Zaydel', M. M., Ryzhov, O. S., Andriankin, E. I.

TITLE: On the Propagation of a Thermal Wave Which is Nearly Spherical (O rasprostranenii teplovoy volny, blizkoy k sfericheskoy)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 1, pp 57-59 (USSR)

ABSTRACT: The influence exercised by slight disturbances on the propagation of a spherical heat wave has already been investigated by a previous paper (Ref 1). The present article shows that the spectrum of the eigenvalues and the corresponding eigenfunctions can be explicitly determined. The equation for the heat input in the case of nonlinear thermal conductivity can be written down in the form

$\frac{\partial W}{\partial t} = \frac{a}{k+1}\nabla^2 (W^{k+1})$, where W denotes the volume energy density. It is useful to introduce the function $F = W^k$, which satisfies the equation $\frac{\partial F}{\partial t} = a\left[F\nabla^2 F + \frac{1}{k}(\nabla F)^2\right]$. First, the quantity of heat Q is supposed to be released at the origin of coordinates. The solution of this similarity problem is explicitly written down. Temperature

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On the Propagation of a Thermal Wave Which is Nearly Spherical

distribution behind the front of the thermal wave is of the form $F(r.\theta.\varphi.t) = F_o(r.t) + f(r.\theta.\varphi.t)$, where f is small compared to $F_o(r.t)$. In linear approximation the equation

$$\frac{\partial f}{\partial t} = a\left[f\nabla^2 F_o + F_o\nabla^2 f + \frac{2}{k}(\nabla F_o)\nabla f\right]$$ is obtained for f,

and the solution is set up as $f(r.\theta.\varphi.t) = t^{\lambda}\Psi(\xi)Y_n^l(\theta.\varphi)$. Y_n^l here denotes the spherical harmonics. The equation resulting for Ψ is then given. Non-uniform heating curves the front of the thermal wave. The course of calculation is followed, and the resulting expressions for the eigenvalues and eigenfunctions are written down. The eigenfunctions containing the spherical harmonics Y_n^l with various indices are orthogonal. Eigenfunctions containing the same harmonic are orthogonal with a weight depending only on the index n. The system of eigenfunctions obtained is complete. The authors thank N. A. Popov for a useful discussion.- There are 5 Soviet references.

Card 2/3

SOV/20-124-1-15/69

On the Propagation of a Thermal Wave Which is Nearly Spherical

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR
(Institute for Chemical Physics of the Academy of Sciences, USSR)

PRESENTED: July 26, 1958, by V. N. Kondrat'yev, Academician

SUBMITTED: July 19, 1958

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16(2) SOV/20-128-2-10/59

AUTHORS: Andriankin, E. I., Koryavov, V. P.

TITLE: A Shock Wave in a Plastic Medium of Variable Density

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 2, pp 257 - 260 (USSR)

ABSTRACT: This article deals with the problem of spherically symmetrical explosion in a medium whose density in the shock wave depends on the pressure amplitude. Behind the shock wave the medium is assumed to be plastic (thus, Prandtl's condition of plasticity is complied with) and incompressible (density within the particles being maintained). The posing of the problem is therefore reduced to the assumption that $\sigma_{rf}=f(\epsilon_f)$ on the front and $d\varrho/dt = 0$ behind it are known. Furthermore, Prandtl's condition of plasticity $\sigma_r-\sigma_\theta = k + m(\sigma_r+2\sigma_\theta)$ is assumed to be satisfied, k and m being assumed as known constants. (In a more general investigation, k and m are to be regarded as functions of ϵ). σ_r and $\sigma_\theta = \sigma_\varphi$ denote tensions in the radial direction and in the directions perpendicular to the latter; it

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holds: $\xi = 1 - \varrho_o/\varrho$, where ϱ denotes density and t the time. Index f and index 0 denote the quantities on the front and in the undisturbed medium, respectively. The problem is most conveniently solved by Lagrangian variables. The equations of continuity and motion are defined in the following manner:

$$\frac{\partial r}{\partial r_o} = \frac{r_o^2}{r^2} \frac{\varrho_o}{\varrho(r_o)} ; \frac{\partial}{\partial r_o}\left[r^\alpha \left(\frac{k}{3m} - p\right)\right] = \varrho_o r_o^2 r^{\alpha-2} \frac{\partial u}{\partial t}$$

It holds: $\alpha = \sigma m/(2m+1)$; $p = -\sigma_r$; $u = \partial r/\partial t = \dot{r} = \lambda(t)/r^2$; r and r_o denote the running and the initial coordinate of the particle. The laws of conservation on the wave front, the equality of pressures at the boundary of the expanding cavern ($r(a_o,t) = a(t)$), and the condition of steadiness of the running radius serve as boundary conditions of the afore-mentioned equations. Nondimensional quantities are thenintroduced. The relations

$$\bar{r}^3 = s^3 + 3\int_s^x \varepsilon[y(s)]\, s^2\, ds;\quad \bar{a}^3 = 1 + 3\int_1^x \varepsilon[y(s)]\, s^2\, ds;$$

$\bar{u} = \lambda(x)/r^2;\ \lambda = \varepsilon[y(x)]\, x^2 \sqrt{y(x)}$ are obtained by integration of the above equations. $\varepsilon(y)$ is known from the condition $\varepsilon_f y(x) = f(\varepsilon_f)$ on the wave front. If ε tends toward a certain limit ε_n, the function $f(\varepsilon)$ must exhibit asymptotic behavior corresponding to σ_{rf} tending toward ∞. The relation

$$\tilde{p}\bar{r}^\alpha = K(\bar{r}^\alpha - x^\alpha) + \varepsilon[y(x)]\, x^\alpha y + \sqrt{y}\,\frac{d\lambda(x)}{dx}\int_s^x \bar{r}^{\alpha-4} s^2\, ds - 2\lambda^2(x)\int_s^x \bar{r}^{\alpha-7} s^2\, ds$$

is obtained by integration of the second equation of the above set. If the law $y(x)$ is known for the motion of the shock-wave front, it is possible to determine the distribution of pressure, density, and velocity throughout the entire range $1 \leqslant s \leqslant x$. If e_f on the front depends exponentially on pressure, an asymptotic solution results. This solution, however, is an approximation of experimental data only at small ε. A diagram illustrates the results of experimental calculations. Consideration of the

variable density on the wave front is essential already at a distance of 6 or 7 radii of the charge. The front velocity is exponentially dependent upon the distance. The authors thank S. A. Khristianovich and A. S. Kompaneyets for discussions and for their interest in the present investigation, as well as A.N.Romashov, V.N.Rodionov, and A. P. Sukhotin for the supply of experimental data, and N. S. Razina for her contribution to calculations. There are 2 figures and 2 Soviet references.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences, USSR)

PRESENTED: March 3o, 1959, by S. A. Khristianovich, Academician

SUBMITTED: March 25, 1959

ANDRIANKIN, E.I., kand.fiz.-matem.nauk

Propagation of flat one-dimensional waves in the case of impact on a plastic medium. Trudy MFTI no.5:55-61 '60. (MIRA 13:10)
(Shock waves)

28908
S/170/61/004/011/008/020
B104/B112

26.5100

AUTHOR: Andriankin, E. I.

TITLE: Effect of radiant heat conduction on the gas flow in a heavy explosion

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 11, 1961, 68-72

TEXT: The solutions of the problem of a heavy explosion obtained by L. I. Sedov (DAN SSSR, 52, 17, 1946) are not valid in the explosion center. Temperatures increase infinitely with $r \longrightarrow 0$. With the aid of an approximation the author obtains a solution of the problem near the center of a heavy explosion, in which allowance is made for the radiant heat conduction. Inertial terms of the kinetic equation are neglected, and temperature, density, and pressure are time-dependent within the explosion zone only. Using results of L. I. Sedov (Metody podobiya i razmernosti v mekhanike (Methods of similarity and dimension in mechanics), Gostekhizdat, M., 1957) formulas are derived for the calculation of density, velocity, pressure, and temperature. It is shown that the density in the center of an explosion depends strongly on the path of

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Effect of radiant heat conduction ...

emission of the shock wave and depends slightly on the adiabatic exponent. In the radiant heat conduction zone the velocity of the gas is smaller than that obtained by Sedov. Pressure varies proportional to r_{front}^{-3}. The method suggested may be used to estimate the effect of radiant heat conduction in the center of a non-spherical explosion. The author thanks A. S. Kompaneyets for valuable advice. There are 1 figure and 10 references: 9 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: Taylor, G., Proceedings of the Royal Society, 201, 175, 1950.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR. g. Moskva (Institute of Physical Chemistry of the Academy of Sciences USSR, Moscow)

SUBMITTED: March 14, 1961

Card 2/2

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S/057/61/031/007/003/021
B108/B209

26.2321

AUTHORS: Andriankin, E. I. and Sayasov, Yu. S.

TITLE: Effect of an external magnetic field upon the boundary layer of a plasma

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 7, 1961, 775-780

TEXT: The authors studied the effect of an external magnetic field upon the laminar boundary layer in a plasma, forming when a supersonic gas flow passes by a body. The presence of a magnetic field perpendicular to the gas flow changes the velocity profile in the narrow zone of the boundary layer and thus reduces friction between the flow and a body in it, provided the temperature difference between body and gas is sufficient-ly high. When the temperature difference is small, so that the gas may be assumed to be incompressible, and when a pressure gradient exists along the flow, the hydrodynamic equations of the laminar boundary layer may be written in the form

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$$\left.\begin{aligned} v_x\frac{\partial v_x}{\partial x}+v_y\frac{\partial v_x}{\partial y}&=-\frac{\partial h}{\partial x}+\nu\frac{\partial^2 v_x}{\partial y^2}-\frac{H^2\sigma v_x}{\rho c^2},\\ \frac{\partial h}{\partial y}&=0,\quad \frac{\partial v_x}{\partial x}+\frac{\partial v_y}{\partial y}=0,\\ c_p\left(v_x\frac{\partial T}{\partial x}+v_y\frac{\partial T}{\partial y}\right)&=\frac{\partial}{\partial y}\varkappa\frac{\partial T}{\partial y}+\nu\left(\frac{\partial v_x}{\partial y}\right)^2-v_x\frac{\partial h}{\partial x}+\frac{H^2\sigma v_x}{\rho c^2}. \end{aligned}\right\} \quad (1)$$

where ν is the dynamic viscosity, $\varkappa$ - the thermal conductivity coefficient, c_p - specific heat at constant pressure. This system is transcribed into the form

$$\left.\begin{aligned} v_x\frac{\partial v_x}{\partial x}+v_y\frac{\partial v_x}{\partial y}&=-\frac{\partial h}{\partial x}+\nu\frac{\partial^2 v_x}{\partial y^2}-\frac{H^2\sigma v_x}{\rho c^2},\\ \frac{\partial v_x}{\partial x}+\frac{\partial v_y}{\partial y}&=0,\\ v_x\frac{\partial\theta}{\partial x}+v_y\frac{\partial\theta}{\partial y}&=\frac{1}{Pr}\nu\frac{\partial^2\theta}{\partial y^2}+\frac{\nu}{c_p\rho}\left(1-\frac{1}{Pr}\right)\frac{\partial}{\partial y}v_x\frac{\partial v_x}{\partial y}. \end{aligned}\right\} \quad (2)$$

where $\theta=\frac{1}{2}v_x^2+c_pT$ and $Pr=\frac{\nu\rho c_p}{\varkappa}$, considering that h is a function of x only. Since the examination of the system (2) in the general case is very

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Effect of an external magnetic field ...

difficult, the authors discuss two model cases. In the first case, H is assumed to obey the law $H=H_0\sqrt{\frac{l}{x}}$, where l is a characteristic length. The velocity v_x in the stream be constant: $v_x=v_0=\text{const}$. With the new variables

$$v_x=\frac{\partial\psi}{\partial y},\quad v_y=-\frac{\partial\psi}{\partial x},\quad \psi=\sqrt{2\nu v_0 x}\,\varphi,\quad \xi=y\sqrt{\frac{v_0}{2\nu x}},$$

the system (2) assumes the form

$$\left.\begin{aligned}&\varphi'''+\varphi\varphi''=\beta_1[\varphi' f(T)-1],\\&\theta''+\varphi\theta'=\gamma(\varphi')^2,\\&\theta=\frac{\theta}{c_p T_0}=\frac{T}{T_0}+\frac{v_0^2}{2c_p T_0}(\varphi')^2,\\&\gamma=1-\frac{1}{P_r},\quad \beta_1=\frac{2H_0^2 l\sigma_0}{\rho c^2}.\end{aligned}\right\}\qquad (3).$$

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Effect of an external magnetic field ...

The conductivity σ is given in the form $\sigma=\sigma_0 f(T)$ where $f(T_0)=1$. The primes indicate the derivatives with respect to ξ. With the boundary conditions for φ and v and assuming thermal insulation on the surface, the system (3) has the plain integral $v=v_0$. With the function $f(T(\xi'))=F(\xi')$ and the new variables $(\xi')^2=z$ and φ, the system (3) leads to one equation:

$$\sqrt{z}\frac{d^2z}{d\varphi^2}+\eta\varphi\frac{dz}{d\varphi}=\beta[\sqrt{z}F(z)-1], \qquad z(0)=0,\ z(\infty)=1,\ \beta=2\beta_1 \tag{5}$$

The friction on the body, $\tau=\nu\rho\left(\frac{\partial v_x}{\partial y}\right)_{y=0}$, may be expressed by $z(\varphi)$:

$$\tau=\rho v_0\sqrt{\frac{\nu v_0}{x}}\eta_1(\beta),\quad \eta(\beta)=\frac{dz}{d\varphi}\Big|_{\varphi=0} \tag{5a}$$

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The resulting function $\eta(\beta)$ may be represented as an asymptotic expansion:

$$\eta = \sqrt{2w(0)\beta}\left(1 + \sum_{k=1}^{\infty} \frac{1}{\beta^k}\psi_k(0)\right). \qquad (9)$$

The second example is a gas stream of constant conductivity passing through a diffuser which consists of two intersecting planes. The magnetic field is generated by a current along the line of intersection of the planes, i. e. it is purely circular and perpendicular to the stream, and obeys the law $H=H_0\frac{1}{x}$. For this case, one obtains

$$\tau = \rho\sqrt{\frac{4va^3}{3x^4}\left(1 + \frac{3}{4}\frac{H_0^2l^2a}{\rho v^2 x}\right)}. \qquad (12)$$

$v_x = -\frac{\alpha}{x}$. The results show that at sufficiently high magnetic field strengths H, friction rises with H. There are 2 figures, and 4 references: 2 Soviet-bloc and 2 non-Soviet-bloc.

Card 5/6

10.4000

69501

AUTHOR: Andriankin, E. I.

S/020/60/131/04/015/073
B013/B007

TITLE: A Convergent Wave in a Plastic Medium

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 4, pp 769-772 (USSR)

TEXT: The explosion in a plastic compressible medium has already been investigated by A. S. Kompaneyets (Ref 1). In the present paper the author applies a simplified law of compression whereby one obtains simple formulas for the law of motion of the front of a divergent spherical wave. For an analogous law of compression (the density of the medium is assumed to attain the limit $\rho_* > \rho$ at an arbitrary non-vanishing pressure) the author investigates the problem of a convergent plastic wave, which can be formulated as follows: A pressure varying according to the preset rule $P = P_0 F(t/\tau_0)$ is assumed to occur at the free boundary of a spherical layer with the initial external radius a_0 at the instant $t = \tau_0$. $F = F(t/\tau_0, x)$ holds in the general case. The pressure acting on the internal surface of the spherical layer with the initial radius b_0 is assumed to be equal to zero. When pressure is applied to the substance, the shock wave begins to propagate. The medium is assumed to be

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69501

A Convergent Wave in a Plastic Medium

S/020/60/131/04/015/073
B013/B007

incompressible behind the front ($\varrho_{fr} = \varrho_* > \varrho_0$), and the condition of plasticity $\sigma_r - \sigma_\theta = k + m(\sigma_r + 2\sigma_\theta)$ is assumed to be satisfied. Here, k and m are known constants, σ_r and $\sigma_\theta = \sigma_\varphi$ are the principal stresses. The subscript fr denotes the quantities behind the wave front. The problem is solved in Lagrange coordinates. The equation of motion, the equation of continuity, and the pertinent boundary conditions are written down and transformed. Several transformations lead to the distribution of pressure and velocity. Next, the author derives an ordinary differential equation for the velocity of the wave front. If the outer pressure drops rapidly, the wave may stop before reaching the center. The equations derived here also describe the solution of the problem of fusion of a spherical layer of an incompressible plastic material. Furthermore, the author writes down the asymptotic solution for this case. Figures 1 and 2 contain the results obtained by numerical integration of the differential equation. If the behavior of the solution with $x \longrightarrow 0$ and $s \longrightarrow 0$ is known, it is possible to investigate the concentration of energy in the center. Energy is concentrated there only if the spherical layer of the incompressible liquid has been fused. The problem can be solved in a similar manner in the case of variable

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A Convergent Wave in a Plastic Medium

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B013/B007

compression of the substance (as a function of the pressure amplitude on the wave front). There are 2 figures and 4 Soviet references.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences of the USSR)

PRESENTED: November 13, 1959, by N. N. Semenov, Academician

SUBMITTED: November 13, 1959

Card 3/3

Generation of electrical ...

energy output is determined for the subsonic outflow of plasma and for a supersonic inflow when either of sub- or supersonic outflows is possible. The influence of friction between the plasma and the walls is considered and various parametric relations are discussed, and illustrated by graphs. Considerations of the relative merits of subsonic and supersonic flow conditions lead to the conclusion that in practice subsonic flows are more convenient. There are 9 figures and 9 references: 6 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: J. L. Neuringer, Optimum power generation from a moving plasma, J. Fluid Mech., 1960, vol. 7, part 2; W. B. Coe, C. L. Eisen, The effect of variable Plasma Conductivity on MHD Energy Converter, Performance Electrical Engineering, 1960, no. 12, pp. 997; R. J. Rosa, Physical Principles of Magnetohydrodynamic Power Generation, Phys. Fluids, vol. 4, no. 2.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AS USSR)

SUBMITTED: November 30, 1961

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S/658/62/000/008/006/007
D201/D301

24.5200

AUTHOR: Andriankin, E.I.

TITLE: A point-source heat wave

SOURCE: Moscow. Fiziko-tekhnicheskiy institut. Trudy, no. 8, 1962. Issledovaniya po fizike i radiotekhnike, 109 - 118

TEXT: The author considers a point source heat wave propagating in conditions at which the thermal conductivity depends on temperature. The problem is solved for the case of gradual liberation of energy at the wave center by the approximate method of moment ratios. Since the effectiveness of this method depends to some extent on the given temperature profile, some of the typical solutions are found for a source radiating energy according to the exponential law $Q = Q_0 t^q$, for various values of the parameter q. It is assumed that the process of radiation in plasma can be represented by the interpolation formula $l = l_0 \rho^{\delta} T^{\beta_1}$ and density is an exponential function of

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A point-source heat wave

the coordinate $\rho = \rho_0 r^{\omega_1}$. The problem of stability of solution is analyzed and the spectrum of eigenvalues given. The analysis shows that with gradual supply of heat the temperature of the point source remains infinite and its distribution beyond the wave front differs from the 'plateau'. If the temperature is however reduced to its value at $r \rightarrow 0$, such a function approaches the 'plateau' which makes it possible to apply successfully the method of moments. The comparison of two cases, when a given quantity of energy is liberated instantaneously and according to the exponential during time t_1 shows that in the first case the wave propagates over a longer distance during time t_1. The author acknowledges helpful suggestions of V.P. Buzdin. There is 1 figure and 9 Soviet-bloc references.

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S/658/62/000/008/007/007
D201/D301

3.2600
24.2120

AUTHOR: Andriakin, E.I.

TITLE: The effect of a magnetic field on the boundary plasma layer with diffusion

SOURCE: Moscow. Fiziko-tekhnicheskiy institut. Trudy, no. 8, 1962. Issledovaniya po fizike i radiotekhnike, 119 - 130

TEXT: Starting with the usual system of magneto-hydrodynamic equations, valid when the time of the free electron flight is short as compared with the Larmor frequency, the author gives an analysis of the effect of an external magnetic field on the compressible boundary plasma layer, taking diffusion into account. To simplify the problem, it is solved for a specific case in which the conditions at the surface of the substance correspond to that of evaporation of an easily ionized substance. It is further assumed that conductivity of the gas depends on the concentration of this substance and on temperature and that the magnetic field component is perpendicular to the velocity of the fundamental flux and varies according to

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L 17456-63 EWP(r)/EWT(d)/EWT(m)/BDS AFFTC/APGC EM

ACCESSION NR: AP3006124 S/0207/63/000/004/0068/0073

AUTHOR: Andriankin, E. I. (Moscow)

TITLE: Collision between two plates at high speed

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 4, 1963, 68-73

TOPIC TAGS: collision problem, shock wave, strong shock, strong discontinuity, rarefaction wave, isentropical solution, density distribution, adiabatic exponent, shock energy

ABSTRACT: Collision between two plates moving at high speeds leading to their total destruction and transformation into a gas escaping into a vaccum has been studied. It is shown that almost all the energy of the gas is transmitted in the direction of the shock and that a significant decrease in the energy flux takes place only in the case of collision against a thick obstacle. When the mass of the obstacle is 25 times greater than the mass of the colliding object, 50% of the total energy is transmitted into the shock wave. Increasing the density of a colliding object intensifies the energy transmission. A criterion

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ACCESSION NR: AP3006124

is defined for strong discontinuity generation at the reflection of a rarefaction wave from the surface of a collision. The problem of the collision of two plates of identical density and thickness, for which the intensity of the shock waves is a constant, is described by an exact isentropical solution which is valid for a series of discrete values of adiabatic exponent γ. If the density of a colliding object differs from that of its obstacle, an exact solution may be found only for $\gamma = 3$. In cases where the thickness of each is arbitrary, an approximate method is used which is based on the assignment of density distribution as a polynomial whose coefficients are selected on the basis of the principles of conservation. Orig. art. has: 4 figures and 13 formulas.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences SSSR)

SUBMITTED: 02May63 DATE ACQ: 11Sep63 ENCL: 00

SUB CODE: AI NO REF SOV: 007 OTHER: 000

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ANDRIANKIN, E.I.; STEPANOV, Yu.S.

Depth of perforation due to the impact of meteoric particles. Isk.sput.Zem. no.15:44-52 '63. (MIRA 16:4)
(Meteorites) (Impact)

L 39293-65 EWT(d)/EWT(l)/EWP(m)/EWT(m)/EWP(w)/EWG(v)/EWA(d)/EEC-4/EEC(t)/
EDR/FCS(k)/EWA(h)/EWA(c) Pd-1/Pe-5/Pae-2/Pi-4 WVH/WW/EM/GW

ACCESSION NR: AP5009547 S/0207/65/000/001/0088/0092

AUTHOR: Andriankin, E. I. (Moscow)

TITLE: Reaction impulse at high shock velocities

SOURCE: Prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 1, 1965, 88-92

TOPIC TAGS: reaction impulse, collision at high speed, interaction at collision, shock wave, shock wave heating, radiation cooling, radiation energy flux, meteorite interaction with obstacle

ABSTRACT: In order to clarify the phenomena occuring when a meteorite interacts with a rigid obstacle, a particular case is considered where a meteorite is replaced by a plane layer of gas with thickness h and density ρ_0 interacting with a rigid obstacle in vacuum. The radiative energy transfer occurring in a mass of gas heated by a shock wave is investigated and its effect on the reaction impulse is considered. An exact calculation of the energy flux streaming from a hot layer of gas requires the solution of the kinetic equation, but when evaluating the effect of radiation on the reaction

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ACCESSION NR: AP5009547

impulse, one might restrict himself to considering the limiting case when the quantum path is small $\ell(\rho, T_1) \ll h_1$. This assumption is acceptable as the radiation time is much smaller than the characteristic time of plasma dispersion into vacuum and the result shows a weak dependence on the process of luminescence. An expression is derived for the reaction impulse. When $\ell \ll h_1$, the cooling process is described by a diffusion approximation for the kinetic equation and the heat flux is expressed through the gradient of the radiation density. A numerical example is given and the characteristic shock velocities against the rigid wall are determined and plotted for a ferric meteorite and an air jet. A case where the striking body and obstacle are of the same matter is also considered. A qualitative evaluation of the phenomena shows that when the velocity of the shock is greater than the critical velocity, the reactive impulse increases considerably more slowly than in the dispersion of an evaporated meteorite and that part of the obstacle without radiation. Orig. art. has: 3 figures and 18 formulas. [AB]

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L 23433-66 EWT(l)/EWT(m)/EWP(w)/EWA(d)/T/EWP(t) IJP(c) JD/GW/JH
ACC NR: AP6012833 SOURCE CODE: UR/0293/66/004/002/0280/0290

17
B

AUTHOR: Andriankin, E. I.

ORG: none

TITLE: Penetration of meteorites through obstacles

SOURCE: Kosmicheskiye issledovaniya, v. 4, no. 2, 1966, 280-290

TOPIC TAGS: hypervelocity impact, meteorite impact, meteorite penetration, target penetration, thin target

ABSTRACT: A theoretical analysis of hypervelocity impact of meteorites on an obstacle is presented. The magnitudes of hole diameter d, mass m, impulse I, energy E, and plasma-expansion angle beyond the obstacle φ are calculated for a range of obstacle thicknesses smaller than the depth of penetration for a given ductile material, and for impact velocities higher than penetration velocities. It is assumed that the impact occurs in the direction perpendicular to the obstacle plane. The results of calculations indicate that at high impact velocities, with the meteorite diameter greatly exceeding the obstacle thickness, the material vapors play a major part in increasing the hole diameter. A cylindrical meteorite with a diameter d_0 hitting an aluminum target $0.5\ d_0$ thick at a velocity of 30 km/sec leaves a hole

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L 23433-66

ACC NR: AP6012833

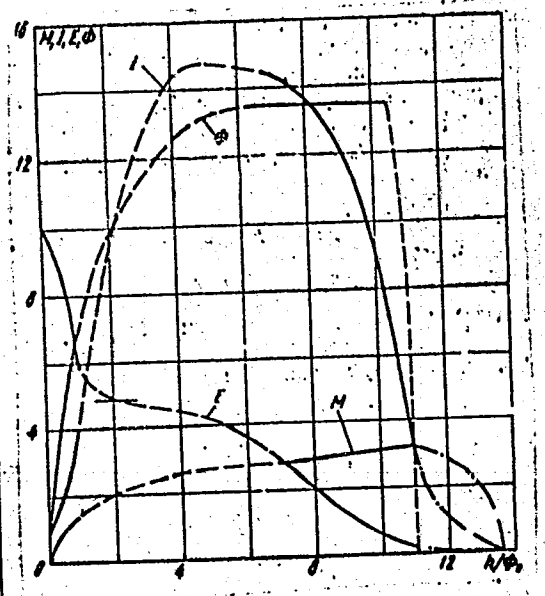

Fig. 1. Characteristic values for meteorite impact on an aluminum target

with a diameter $d_3 = 7\ d_0$. For the case of an aluminum target h mm thick and a spherical meteorite with a density of 2.7 g/cm^3 and a diameter of ϕ_0 the values of M, I, E, and ϕ (hole diameter) were calculated and plotted as a function of h/ϕ_0 (see Fig. 1). It is noted that at the present time the values calculated cannot be compared with experimental data obtained at cosmic velocities. However, there is a satisfactory qualitative agreement with experimental data obtained at lower velocities. Orig. art. has: 5 figures. [DV]

SUB CODE: 22, 19/ SUBM DATE: 17Mar65
ORIG REF: 017/ OTH REF: 004
ATD PRESS: 4235

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ACC NR: AP7002002 SOURCE CODE: UR/0040/66/030/006/1133/1139

AUTHOR: Andriankin, E. I. (Moscow)

ORG: Institute of Chemical Physics, AN SSSR (Institut khimicheskoy fiziki AN SSSR)

TITLE: On some one-dimensional unsteady flows of gas during shock and detonation in a variable density medium

SOURCE: Prikladnaya matematika i mekhanika, v. 30, no. 6, 1966, 1133-1139

TOPIC TAGS: shock wave, detonation wave, gas dynamics

ABSTRACT: Plane shock and detonation waves are investigated in a gas whose density varies according to the law

$$\rho_0 = a_0 x_0^{\omega}$$

and whose caloricity per unit mass is given by the expression

$$Q = Q_0 x_0^{2.3}$$

It is assumed that a piston moves with a velocity of $\sim t^{\beta/1-\beta}$ behind the detonation wave. The presence of the parameter β substantially complicates the field of integral curves compared with the case considered earlier by Sedov because it simultaneously includes a strong explosion, the presence of the piston, detonation from the free

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ACC NR: AP7002002

boundary and a brief shock. The work investigates the behavior of the integral curves. An exact solution is established for the case when the variable density medium is subjected to a brief shock. Orig. art. has: 25 formulas, 10 figures.

SUB CODE: 20,19/ SUBM DATE: 08Mar66/ ORIG REF: 013

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